

Tape Tracks – Controlling Tape Recorders

CUBASE
VST



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Introduction

Cubase VST can control tape recorders and similar devices via MIDI. This feature makes MIDI and analog audio recording an integrated environment!

What Cubase VST Can Do with Tape Recorders

Basically, Cubase VST allows you to do two things with the tape recorders it supports:

- Control the tape recorder's transport control from Cubase VST's Transport Bar. That is, Cubase VST can make the tape recorder start, stop, rewind etc.,
- Set tracks to record ready on the tape recorder and activate recording on these tracks. You can even use all of Cubase VST's recording features (punch in/out, Cycled recording etc), to control the tape recorder!

About Sync and Tape Recorder Control

Controlling Tape recorders is a two way process:

- Cubase VST sends out commands to the tape recorder, asking it to locate to certain positions and activate recording etc.
- The tape recorder delivers synchronization information (in most cases in the form of MIDI Timecode) to Cubase VST, which Cubase VST synchronizes to (see the Synchronization chapter of the "Getting into the Details" document for the complete picture).

Even though it appears as if Cubase VST is controlling the tape recorder completely, it is important to remember that Cubase VST is being synchronized to the tape recorders playback speed, not vice versa.

MIDI Machine Control

Cubase VST uses a standard MIDI protocol for controlling tape transports, called MIDI Machine Control. There are a number of tape recorders and hard disk recording systems on the market that support this protocol. Included with Cubase VST is a driver for using Cubase VST with MIDI Machine Control compatible tape recorders.

Using MIDI Machine Control and ASIO Positioning Protocol

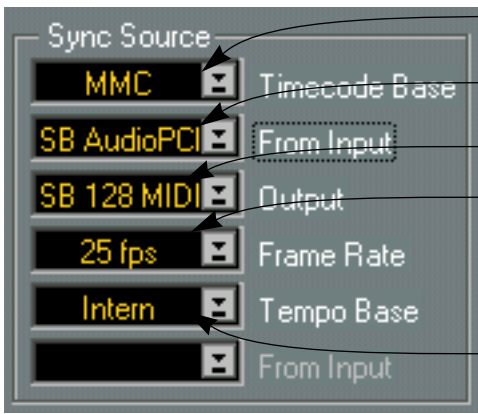
You may want to use MMC (MIDI Machine Control) to control the transport of the sync master, even when using ASIO 2.0. This is no different from using MMC with regular synchronization. Just note the following points:

- **To enable MIDI Machine Control, select "ASIO 2.0/MMC" from the Timecode base pop-up in the Synchronization dialog.**
- **Select an MMC Output (on the Output pop-up menu in the Sync Source section of the Synchronization dialog) that corresponds to the device you want to control.**
This may be an external hardware MMC converter. It may also be a "virtual MIDI device", if the device is controlled directly from your computer.

Standard MIDI Machine Control

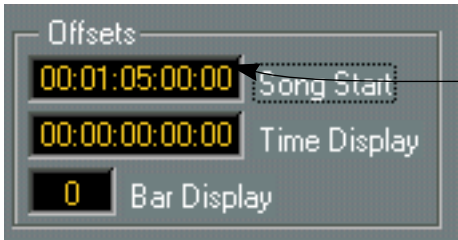
If you have a tape transport that supports the MIDI Machine Control standard, proceed as follows:

1. Connect the MIDI Out on the tape recorder to a MIDI In on your interface.
2. Connect the MIDI In on the tape recorder to a MIDI Out on your interface.
3. Make sure you have Timecode recorded on the tape recorder, and that it is set up to transmit this as MIDI Timecode via its MIDI out.
4. Also make sure the tape recorder is set to transmit and receive MIDI Machine Control commands.
5. Pull down the Options menu and select "Synchronization...".
6. Pull down the "Timecode Base" Sync Source menu in this dialog box and select MMC. If you can't find the correct option on the menu, the driver hasn't been loaded for some reason.
7. Use the "From Input" pop-up menu below "Timecode Base" to select the correct MIDI Input.
8. Use the Output menu to select to which MIDI port Cubase VST should send its MIDI Machine Control messages.
9. Select the correct frame rate from the "Frame Rate" pop-up menu.



- MMC driver activated.
- MIDI port selected for sync input.
- MIDI port selected for MMC output.
- The Frame Rate should be set to match the Timecode on the tape (in this example 25 fps)
- Tempo sync should be deactivated.

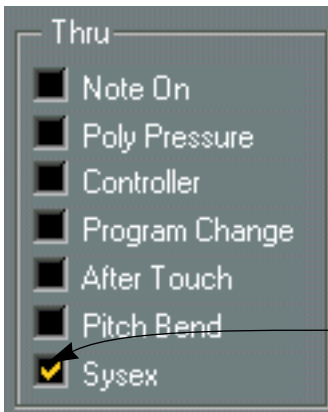
10. Set the "Song Start" value to the position on the tape where you want Cubase VST to start (the reference to Song Position 1. 1. 0).



- The Song Start should be set to match the position on the tape where you want the Song to start.

11. Close the dialog box.

12. Open the MIDI Filtering dialog and make sure the MIDI Machine Control System Exclusive messages are not echoed back to the tape recorder.



System Exclusive should not be Thru-put.

13. Close the MIDI Filtering dialog.

14. Click on the Sync button on the transport bar (or press [X]).

Cubase VST is now expecting sync to come from an external source, in this case the tape recorder.

15. Press PLAY on the tape recorder and let the tape roll for a few seconds, so Cubase VST can “learn” about the Timecode positions on the tape. Stop the tape recorder.

16. Now activate play from Cubase VST.

The tape recorder should wind the tape to a position just before the Song Position in Cubase VST and go into Play. After a short while, Cubase VST should start, in sync.

Try to Stop, Fast Forward and Rewind from Cubase VST and activate Play from different positions in the Song. The tape recorder should follow. Record something sequenced from Cubase VST onto an audio track and make sure that what you hear “live” from Cubase VST and taped on the tape recorder is in perfect sync from all positions.

Things to note before proceeding

- Make up a DEF.ALL Song or a DEF.SET setup, with all sync settings as they are now. This will make Cubase VST control the tape recorder right after startup.
- When you record the next song on the tape, advance the “Song Start” value to a position that corresponds to some position on the tape after this first song. By doing so you have shifted forward Cubase VST’s Song Position 1. 1. 0 to that position. When you later save this second Song, this “Song Start” value is saved with it so that the tape recorder always will wind to the correct position for this Song.
- Each time you start up your tape recorder, you may have to activate play from its front panel for a couple of seconds. If you don’t, Cubase VST has no chance of “knowing” where to wind the first time, since it doesn’t know what Timecode is recorded on the tape.

Using the Synchronization Setup

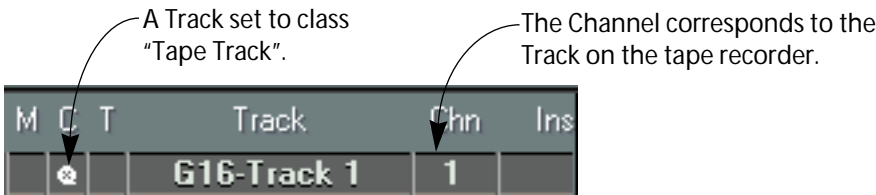
The tape transport of your tape recorder can now be controlled from Cubase VST's Transport bar, no matter which window is up on the screen, as long as Sync is activated on the Transport bar.

Whenever you want to turn off the synchronization between the tape recorder and Cubase VST, simply deactivate Sync on the Transport Bar.

Using Tape Tracks

Tape Tracks allow you to activate recording on your tape recorder from the Arrange window. This is done identically, regardless of which of the supported tape recorders and available drivers you use:

- 1. Create a new Track and set its class to Tape Track.
- 2. Use the Channel column in Cubase VST to select the tape recorder track you wish to record on.
For example, to record on track 3 on the tape recorder, set the Cubase VST Track to Channel 3.



- 3. If you wish, make up tape Tracks for as many of your actual tape recorder tracks as you like. You can move the Tracks and create new Tracks at will, it is only the channel setting that decides which track on the tape recorder each Cubase VST Tape Track controls.
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- ❑ We strongly recommend you not to make up a Cubase VST Tape Track for the tape recorder track you have the Timecode (SMPTE) on, since recording over the Timecode can be disastrous. Retrieving a lost sync track is very hard. To avoid confusion, do not set two Tape Tracks to the same channel.
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Setting Tracks to Record Ready

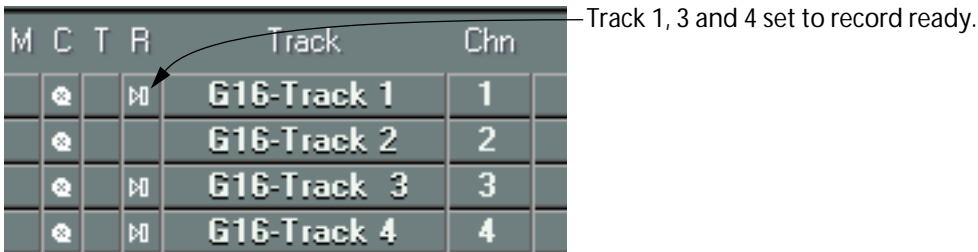
One Track at a Time

- To activate Recording on one Track, simply select it.
The corresponding tape recorder track is set to Record Ready mode.

Multiple Tracks

To activate recording on multiple Tracks, proceed as follows:

- 1. Activate Multi Recording in Merge mode.
See the Multi Track Recording chapter of the "Getting into the Details" document for details.



- 2. Use the "R" column to set as many Tape Tracks as desired to record ready.
The corresponding tracks on the tape recorder are put into Record Ready mode.

Performing the recording

When you activate recording in Cubase VST, recording immediately starts on the track(s) on the tape recorder.

You can use all of Cubase VST's manual and automatic punch in and out options to control recording on as many Tape Tracks as you like. You can also record in Cycle mode, but you will have to wait some time for the tape recorder to rewind at the end of each "lap".

About the Parts

When you record on a Tape Track, Parts appear between the positions you punch in and out, just as with for example MIDI Tracks.

However, these Parts do not contain any data and can not be opened in any editor.

The Tape Track Parts are instead only used as visual guides to where on the Track you have actually recorded anything, on the tape. If you for example are doing background vocals for a number of choruses in a Song, the Tape Track Parts are great guides to which choruses you have recorded on yet, and which you have not.